THE BENEFITS OF RESTORATION IN URBANIZING WATERSHEDS: DEVELOPING VALUE INDICATORS AND UNDERSTANDING SOCIAL BARRIERS AND OPPORTUNITIES

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Ecological restoration can reestablish ecosystem services (ES) that provide important social benefits, but managers with limited funds and resources are forced to prioritize potential restoration sites. Prioritizing restoration sites based on ecological functioning and expected ES production alone neglects vital information for evaluating tradeoffs: who benefits from the resulting ecosystem services, and by how much. We present a rapid assessment approach for ranking restoration options based on evaluating both the ecological functioning and the magnitude of social benefits from resulting ES, and contextualize the approach by attending to the social barriers to and opportunities for restoration.

Our research has three primary objectives: advancing methods for developing and applying non-monetary indicators of non-market economic values; improving understanding of social aspects of restoration planning and management, focusing on communication between managers and the public, and public engagement in the restoration process; and providing guidance to users for applying our approach to understand and evaluate the suite of ecosystem services provided by restoration projects. We are conducting our research in the Woonasquatucket Watershed in Rhode Island, USA—an urbanizing watershed with a wide range of both ecological quality and sociodemographics—but our methods will be transferable to other urbanizing watersheds.

We are developing our ecosystem service benefit indicators approach and selecting indicators through a structured framework of theoretical modeling, empirical research, and literature review. We are using more sophisticated modeling to develop indicators of flood risk reduction and aesthetic benefits. The end product will be a step-by-step guide to applying the benefit indicators approach, with associated spreadsheet-based tools. It is intended to be used by a broad range of stakeholders to justify restoration budgets by demonstrating benefits gained; to compare proposals when awarding restoration funds for specific projects; to pre-screen projects that require further evaluation; or to serve as a template for discussion when making mitigation decisions.

The second part of our research— improving understanding of social aspects of restoration planning and management—focuses on communication between managers and the public, and public engagement in the restoration process. We have conducted interviews with restoration managers to explore both public perceptions of services and disservices associated with ecological restoration, and how various approaches to stakeholder interaction may influence the probability of successful outcomes. Our findings from these interviews will be incorporated into the guide for decision-makers, to provide context and guidance regarding successful strategies for public engagement in restoration planning and decisions.

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